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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,101	12/27/2005	Sarah C. Bodary-Winter	P1978R1	3802
9157 7590 04/07/2008 GENENTECH, INC. 1 DNA WAY SOUTH SAN FRANCISCO, CA 94080				
EXAMINER BASKAR, PADMAVATHI				
ART UNIT 1645		PAPER NUMBER		
MAIL DATE 04/07/2008		DELIVERY MODE PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/527,101

**Applicant(s)**

BODARY-WINTER ET AL.

**Examiner**

PADMA v. BASKAR

**Art Unit**

1645

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) 1-12 and 18-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-85/86)
- Paper No(s)/Mail Date 4/18/05
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restriction***

1. Applicant's response to the Restriction Requirement filed on 11/2/07 is acknowledged. Applicant elected Group III (Claims 13-14 and 15-17) drawn to antibody that binds to SEQ.ID.NO:20. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

### ***Status of Claims***

2. Claims 1-26 are pending in the application.

Claims 1-12 and 18-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention there being no allowable generic or linking claim.

Claims 13-17 with respect to antibody that binds to SEQ.ID.NO: 20 are under examination.

### ***Specification***

3. a. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code, see in particular , page 17, line 27. Applicant is required to delete the embedded hyperlink and/or other form of browser- executable code. See MPEP § 608.01.

b. The use of the trademark for example on page 21, line 12 has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

### ***Claim Objections***

4. Claims 13-17 are objected as they dependent from withdrawn claims, i.e., non-elected invention. In view of applicant's election (SEQ.ID.NO:20), it is suggested to amend the claims to the elected SEQ.ID.NO:20.

***Information Disclosure Statement***

5. The Information Disclosure Statement filed on 4/18/05 has been reviewed and a signed copy of the same is attached to this office action.

***Claim rejections -35 U.S.C. 101***

6. 35 U.S.C. 101 reads as Follows

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 13 and 15-17 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. As written, do not sufficiently distinguish over cells that exist naturally because the claims do not particularly point out any non-naturally occurring differences between the claimed products and the naturally occurring products. In the absence of the hand of man, the naturally occurring products are considered non-statutory subject matter. See *Diamond v. Chakrabarty*, 447 U.S. 303, 206 USPQ 193 (1980).

The product "antibody" in claim 10 has the same characteristics as that found in nature because antibody in a human body read on the claims. Insertion of "isolated" can overcome the rejection. See MPEP 2105.

***Claim Rejections - 35 USC 112, first paragraph***

8. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

9. Claims 13-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

The Written Description Guidelines for examination of patent applications indicates, "the written description requirement for a claimed genus may be satisfied through sufficient

description of a representative number of species by actual reduction to practice, or by disclosure of relevant, identifying characteristics, i.e., structure or other physical characteristics and/or other chemical properties, by functional characteristics coupled with a known or disclosed correlation between function and structure, or by a combination of such identifying characteristics, sufficient to show applicant was in possession of the claimed genus." (see MPEP 2163).

For examination purposes the examiner is reading the claim limitations of claim 10 into the elected invention, claims 13-17, SEQ.ID.NO:20.

The claims are drawn to an antibody which specifically binds to a polypeptide having at least 80% amino acid sequence identity to an amino acid sequence of the polypeptide shown in Figure 20 (SEQ ID NO:20), said antibody is a monoclonal antibody, a humanized antibody or a single-chain antibody. Claims are also drawn to a composition of matter comprising said antibody in combination with a carrier .

A review of the claim language recited in claims 13-17 indicates that it is drawn to a genus i.e., "an antibody which specifically binds to a polypeptide having at least 80% amino acid sequence identity to an amino acid sequence of the polypeptide shown in Figure 20 (SEQ ID NO:20)" "embraces fragments, variants and thus read on diverse variant species.

Thus, the scope of the claims includes a genus of "variant" polypeptides and the genus is highly variant, inclusive to numerous structural variants because a significant number of structural differences between genus members is permitted. The specification teaches a single polypeptide as set forth as SEQ ID NO:20. The specification does not place any structure, chemical or functional limitations on the variants embraced by claim .The recitation of "polypeptide having 80% amino acid sequence identity to an amino acid sequence (i.e., variant) SEQ.ID.NO:20 " does not convey a common structure or function and is not so defined in the specification. Although the specification teaches that variants mean that PRO polypeptides wherein one or more amino acid residues are added, or deleted, at the N- or C-terminus of the full-length native amino acid sequence and the claim do not provide any guidance on the structure of the polypeptide and what changes can or can not be made. For example, Lederman et al (Molecular Immunology 28:1171-1181, 1991) disclose that a single amino acid substitution in a common allele ablates binding of a monoclonal antibody (see entire document). Li et al (Proc. Natl. Acad. Sci. USA 77:3211-3214, 1980) disclose that dissociation of

immunoreactivity from other activities when constructing analogs (see entire document). "A patentee will not be deemed to have invented species sufficient to constitute the genus by virtue of having disclosed a single species when ... the evidence indicates ordinary artisans could not predict the operability in the invention of any species other than the one disclosed." *In re Curtis*, 354 F.3d 1347, 1358, 69 USPQ2d 1274, 1282 (Fed. Cir. 2004). For inventions in an unpredictable art, adequate written description of a genus which embraces widely variant species cannot be achieved by disclosing only one species within the genus. See, e.g., *Eli Lilly*.

Further, it is not sufficient to define it solely by its principal biological property, because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property. Per the *Enzo* court's example, (*Enzo Biochem, Inc. v. Gen-Probe Inc.*, 63 USPQ2d 1609 (CAFC 2002) at 1616) of a description of an anti-inflammatory steroid, i.e., a steroid (a generic structural term) couched "in terms of its function of lessening inflammation of tissues" which, the court stated, "fails to distinguish any steroid from others having the same activity or function" and the expression "an antibiotic penicillin" fails to distinguish a particular penicillin molecule from others possessing the same activity and which therefore, fails to satisfy the written description requirement. Similarly, the function of binding to the claimed antibodies does not distinguish a particular variant polypeptide from others having the same activity or function and as such, fails to satisfy the written-description requirement. Applicant has not disclosed any relevant, identifying characteristics, such as structure or other physical and/or chemical properties, sufficient to show possession of the claimed genus. Mere idea or function is insufficient for written description; isolation and characterization at a minimum are required. A description of what a material does, rather than what it is, usually does not suffice. *Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d at 1406.

Structural features that could distinguish a "variant " polypeptide in the genus from others in the protein class are missing from the disclosure and the claims. No common structural attributes identify the members of the genus. The general knowledge and level of skill in the art do not supplement the omitted description, because specific, not general guidance is needed. Since the disclosure does not describe the common attributes or structural characteristics that identify members of the genus, and because the genus is highly variant, the function of the binding of antibody alone is insufficient to describe the genus of variant polypeptides of that function equivalently. One of skill in the art would reasonable conclude that the disclosure of a single polypeptide, i.e., SEQ ID NO:20, does not provide a representative

Art Unit: 1645

number of species of variants of SEQ ID NO:20 to describe the claimed genus and as a consequence antibodies that bind such. The recitation of "isolated polypeptide having 80% amino acid sequence identity" does not convey a common structure nor a common function. As such, generic polypeptide sequences that are unrelated via structure and function are highly variant and not conveyed by way of written description by the specification at the time of filing. As such the specification lacks written description for the highly variant genus of single function polypeptides (antibody binding) and one skilled in the art would not recognize that applicants had possession of the genus of claimed polypeptides for antibody binding as instantly claimed.

Therefore, only isolated polypeptide set forth as SEQ ID NO:20, but not the full breadth of the claim meets the written description provision of 35 U.S.C. §112, first paragraph. Applicant is reminded that *Vas-Cath* makes clear that the written description provision of 35 U.S.C. §112 is severable from its enablement provision (see page 1115).

10. Claims 13-17 are rejected under 36 U.S.C. 112, first paragraph, because the specification an isolated antibody which specifically binds to a polypeptide having the amino acid sequence SEQ ID NO:20, said antibody is a monoclonal antibody, a humanized antibody or a single-chain antibody and a composition of matter comprising said antibody in combination with a carrier does not reasonably provide enablement for an antibody which specifically binds to a polypeptide having at least 80% amino acid sequence identity to an amino acid sequence of the polypeptide SEQ ID NO:20, said antibody is a monoclonal antibody, a humanized antibody or a single-chain antibody and a composition of matter comprising said antibody in combination with a carrier. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Claims have been discussed supra.

Please note: A review of the claim language recited in claims indicates that it is drawn to a genus of antibodies which specifically bind to genus polypeptides i.e., "polypeptide having at least 80% amino acid identity" which embraces antibody that bind to fragments and variants, of SEQ.ID.NO:20 (here after referred to variants in the action) .

Instant claims are evaluated for enablement using Wands analysis. Many of the factors regarding undue experimentation have been summarized in *In re Wands*, 858 F.2d 731,8 USPQ2d 1400 (Fed.Circ.1988) as follows:

(1) the nature of the invention, (2) the state of the prior art, (3) the predictability or lack thereof in the art, (4) the amount of direction or guidance present, (5) the presence or absence of working examples, (6) the quantity of experimentation necessary, (7) the relative skill of those in the art, and (8) the breadth of the claims.

The present specification (pages 68-69) teaches that skin biopsies from lesional and non-lesional sites of psoriatic patients were taken in order to identify disease specific genes which are differentially expressed in psoriatic tissue. Genes were compared whose expression was up regulated in psoriatic skin vs. non-lesional skin thus comparing expression profiles of non-lesional skin and psoriatic skin from the same patient, and also comparing against normal skin biopsies of normal healthy donors as a further control. The conclusion of these experiment indicated the polypeptide SEQ.ID.NO:20 ( 388 amino acid sequence) is expressed higher in psoriasis lesional skin than in matched non-lesional skin from psoriasis patients and normal skin taken from .subjects without psoriasis. However, the specification fails to teach a polypeptide having at least 80% amino acid sequence identity to an amino acid sequence of the polypeptide SEQ ID NO:20.

One cannot extrapolate the teaching of the specification to the full enablement of the claims because the claims as written are broadly drawn to polypeptide SEQ.ID.NO: 20 variants. The specification teaches a single polypeptide as set forth as SEQ ID NO:20. The specification does not place any structure, chemical or functional limitations on the variants embraced by claim .The recitation of "polypeptide having 80% amino acid sequence identity to an amino acid sequence (i.e., variant) SEQ.ID.NO:20 " does not convey a common structure or function and is not so defined in the specification. Although the specification teaches that variants mean that PRO polypeptides wherein one or more amino acid residues are added, or deleted, at the N- or C-terminus of the full-length native amino acid sequence and the claim do not provide any guidance on the structure of the polypeptide and what changes can or can not be made. For example, Lederman et al (Molecular Immunology 28:1171-1181, 1991) disclose that a single amino acid substitution in a common allele ablates binding of a monoclonal antibody (see entire document). Li et al (Proc. Natl. Acad. Sci. USA 77:3211-3214, 1980) disclose that dissociation of immunoreactivity from other activities when constructing analogs (see entire document). As such the specification does not teach the highly variant genus of single function polypeptides (antibody binding). In view of the above, one of ordinary skill in the art would be forced into undue experimentation to practice the claimed invention.



Art Unit: 1645

***Claim Rejections - 35 USC § 102***

11 The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

12. Claims 13-17 are rejected under 36 U.S.C. 102 (b) as being clearly anticipated by Ballinger et al ( WO200105825 ,publication date 25-JAN-2001).

The claims (13-14) are drawn to an antibody which specifically binds to a polypeptide having at least 80% amino acid sequence identity to an amino acid sequence of the polypeptide shown in Figure 20 (SEQ ID NO:20), said antibody is a monoclonal antibody, a humanized antibody or a single-chain antibody. Claims (15-17) are also drawn to a composition of matter comprising said antibody in combination with a carrier.

Ballinger et al disclose antibodies including monoclonal antibody, a humanized antibody or a single-chain antibodies ( see claim 13 and page 64, lines 23-28) that specifically bind to Human angiopoietin protein, SEQ.ID.NO: 8, said protein is 100% identical to the polypeptide SEQ ID NO: 20 (see alignment below). Ballinger et al also disclose compositions comprising an active compound such as an antibody in a physiologically acceptable carrier (see page 55, lines 7-10) Thus , Ballinger et al anticipated the claimed invention.

PN WO200105825-A2.  
XX  
XX 25-JAN-2001.  
XX  
PF 17-JUL-2000; 2000WO-US019429.  
XX  
FR 16-JUL-1999; 99US-00354881.  
XX  
XX (HYSE-) HYSEQ INC.  
PA  
XX Ballinger DG, Montgomery JR;  
PI  
XX  
DR WPI; 2001-091966/10.  
DR N-PSDB; AAD02607.  
DR PC:NCBI; gi30023822.

## Art Unit: 1645

DR PC:SWISSPROT; Q86XS5.  
 XX  
 PT Human angiotensinogen proteins and DNA encoding sequences useful for  
 PT preventing, treating or ameliorating a medical condition in a mammalian  
 PT subject e.g. arthritis and cancer.  
 XX  
 PS Claim 10; Page 111-112; 132pp; English.  
 XX  
 CC The present sequence is human angiotensinogen protein, CG144. The present  
 CC invention relates to human angiotensinogen polypeptides such as CG006,  
 CC CG007, CG015, CG144 and CG250. The angiotensinogen polynucleotides are used  
 CC as hybridisation probes, for chromosome and gene mapping, to identify  
 CC polymorphism and for recombinant protein production. Angiotensinogen may be  
 CC useful for modulating vascular stability and neovascularisation  
 CC associated with various pathologies. It is used as a nutritional  
 CC supplement, molecular weight marker and in gene therapy. It is also used  
 CC for preventing, treating or ameliorating angiogenesis related disorders  
 CC such as myocardial infarction, proliferative retinopathy,  
 CC atherosclerosis, coronary heart disease, arterial ischaemia, bone  
 CC disorders (e.g., osteoporosis), abnormal vascular growth, cancer, anaemia  
 CC and chronic inflammations (e.g., asthma and arthritis) and immune  
 CC disorders (e.g., inflammatory reactions and autoimmune diseases),  
 CC haematopoiesis related disorders (e.g., myeloid or lymphoid cell  
 CC deficiencies), coagulation disorders, leukaemias and nervous system  
 CC disorders. It is also used in drug screening techniques for screening  
 CC compounds which are able to modulate the expression or activity of  
 CC angiotensinogen. The compounds can also be used to treat diseases and  
 CC disorders  
 CC  
 SQ Sequence 388 AA;

Query Match 100.0%; Score 2104; DB 4; Length 388;  
 Best Local Similarity 100.0%; Pred. No. 4.4e-203;  
 Matches 388; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy	1	MMSPSQASLLFLNVCIFICGEAVQGCNVHHS	TDSVVNIVE	DGSGNAKDESKND	TVCKED	60
Db	1	MMSPSQASLLFLNVCIFICGEAVQGCNVHHS	TDSVVNIVE	DGSGNAKDESKND	TVCKED	60
Qy	61	CEESCDVKTITREEKHFMCRNLQNSIVSYTR	STKLLRN	MMDEQ	QASLDYLSNQV	NELM 120
Db	61	CEESCDVKTITREEKHFMCRNLQNSIVSYTR	STKLLRN	MMDEQ	QASLDYLSNQV	NELM 120
Qy	121	NRVLLLTTEVFRKQLDPFPHRPVQSHGLD	CTDKIT	GTIGSVTKT	PSGLYIHP	EGSSYPFE 180
Db	121	NRVLLLTTEVFRKQLDPFPHRPVQSHGLD	CTDKIT	GTIGSVTKT	PSGLYIHP	EGSSYPFE 180
Qy	181	VMCDMDYRGSGWTIVIKRIDGIIDPQLW	CDYLDG	FGDLLGE	FWLGLKKIF	YIVNQKNTS 240
Db	181	VMCDMDYRGSGWTIVIKRIDGIIDPQLW	CDYLDG	FGDLLGE	FWLGLKKIF	YIVNQKNTS 240
Qy	241	FMLYVALESDDTLAYASYDNFWLEDETR	FFPKMHL	GRYS	GNAGDA	FRGLKKEDNQNA
Db	241	FMLYVALESDDTLAYASYDNFWLEDETR	FFPKMHL	GRYS	GNAGDA	FRGLKKEDNQNA
Qy	301	STSDVNDGCRPACLVNGQSVKSCSHLNK	TGW	WFNEOGLAN	LGIIH	HFSGKILLATGIQW 360
Db	301	STSDVNDGCRPACLVNGQSVKSCSHLNK	TGW	WFNEOGLAN	LGIIH	HFSGKILLATGIQW 360
Qy	361	GTWTKNNSPVKIKSVSMKIRMYNPFK	388			
Db	361	GTWTKNNSPVKIKSVSMKIRMYNPFK	388			

Art Unit: 1645

13. Claims 13-17 are rejected under 36 U.S.C. 102(e) as being clearly anticipated by Haley et al Patent No. 6586390 (DATE-ISSUED: July 1, 2003) .

Claims have been discussed supra.

Haley et al disclose antibodies including monoclonal antibody, a humanized antibody or a single-chain antibodies (column 57) that specifically bind to Human angiopoietin protein, SEQ.ID.NO: 4, said protein is 100% identical to the polypeptide SEQ ID NO: 20 (see alignment below). Ballinger et al also disclose compositions comprising an active compound such as an antibody in a physiologically acceptable carrier (see column 1 and column 50, lines 27-32) Thus , Haley et al anticipated the claimed invention.

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US-09-596-196-4
; Sequence 4, Application US/09596196
; Patent No. 6586390
; GENERAL INFORMATION:
; APPLICANT: Haley, Dana A
; APPLICANT: Boyle, Bryan J
; APPLICANT: Ho, Alice S
; APPLICANT: Arterburn, Matthew C
; APPLICANT: Tang, Y. Tom
; APPLICANT: Tillinghast, John S
; APPLICANT: Sinku, Ankura
; APPLICANT: Liu, Chenghua
; APPLICANT: Demana, Radoje T
; TITLE OF INVENTION: METHODS AND MATERIALS RELATING TO NOVEL
; TITLE OF INVENTION: PROTHROMBINASE-LIKE POLYPEPTIDES AND POLYNUCLEOTIDES
; FILE REFERENCE: HYS-14
; CURRENT APPLICATION NUMBER: US/09/596,196
; CURRENT FILING DATE: 2000-06-17
; PRIOR APPLICATION NUMBER: 09/552,317
; PRIOR FILING DATE: 2000-04-25
; PRIOR APPLICATION NUMBER: 09/488,725
; PRIOR FILING DATE: 2000-01-21
; NUMBER OF SEQ ID NOS: 9
; SOFTWARE: PatentIn Ver. 2.1
; SEQ ID NO 4
; LENGTH: 388
; TYPE: PRT
; ORGANISM: Homo sapiens
US-09-596-196-4

Query Match          99.8%; Score 2100; DB 2; Length 388;
Best Local Similarity 99.7%; Pred. No. 9.9e-210;
Matches 387; Conservative 0; Mismatches 1; Indels 0; Gaps 0;

Qy      1  MMSPSQASLLFLNVCIFICGEAVQGNQCNVHSTDSVNVNIVEDGSNNAKDESKSNDTVCKED 60
Db      1  MMSPSQASLLFLNVCIFICGEVQGNQCNVHSTDSVNVNIVEDGSNNAKDESKSNDTVCKED 60

Qy      61  CEESCDVKTITREEKHFMCRNLQNSIVSYTRSTKLLRNNMDEQQASLDYLSNQVNMEL 120
Db      61  CEESCDVKTITREEKHFMCRNLQNSIVSYTRSTKLLRNNMDEQQASLDYLSNQVNMEL 120

Qy      121  NRVLLLTTEVFRKQLDPPFHRPVQSHGLDCTDIKDTIGSVTKTPSGLYIHPFGSSYYPE 180
Db      121  NRVLLLTTEVFRKQLDPPFHRPVQSHGLDCTDIKDTIGSVTKTPSGLYIHPFGSSYYPE 180

Qy      181  VMCDMDYRGCGGWTVIQKRIDGIIDFQRLWCDDYLDGPGDLLGEFWLGLKKIPYIVNQKNTS 240
Db      181  VMCDMDYRGCGGWTVIQKRIDGIIDFQRLWCDDYLDGPGDLLGEFWLGLKKIPYIVNQKNTS 240

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Art Unit: 1645

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Qy      241  FMLYVALESEDDTLAYASYDNFWLEDETRFFKMHLGRYSGNAGDAFRGLKKEDNQNMFF 300
Db      241  FMLYVALESEDDTLAYASYDNFWLEDETRFFKMHLGRYSGNAGDAFRGLKKEDNQNMFF 300

Qy      301  STSDVDNDGCRPACLVNGQSVKSCSHLHNKTGWWFNECGLANLNGIHFFSGKLLATGIQW 360
Db      301  STSDVDNDGCRPACLVNGQSVKSCSHLHNKTGWWFNECGLANLNGIHFFSGKLLATGIQW 360

Qy      361  GTWTKNNSEPVKIKSVSMKIRMYNPFYK 388
Db      361  GTWTKNNSEPVKIKSVSMKIRMYNPFYK 388

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### **Conclusion**

14. No claims are allowed.

15. Papers related to this application may be submitted to Group 1600, AU 1645 by facsimile transmission. Papers should be transmitted via the PTO Fax Center, which receives transmissions 24 hours a day and 7 days a week. The transmission of such papers by facsimile must conform to the notice published in the Official Gazette, 1096 OG 30, November 15, 1989. The Right Fax number is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PMR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PMR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PMR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Padma Baskar Ph.D., whose telephone number is (571) 272-0853. A message may be left on the Examiner's voice mail system. The Examiner can normally be reached on Monday to Friday from 6.30 a.m. to 4.00 p.m. except First Friday of each bi-week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shanon Foley can be reached on (571) 272-0898.

Respectfully,

/Padma v Baskar/

Examiner, Art Unit 1645